

# WATER AND LAND RESOURCES DIVISION CAPITAL IMPROVEMENT PROGRAM

## Introduction to Program, Goals, and Highlights

The Water and Land Resources Division Capital Program has two primary goals.

- 1) To protect King County citizens and property from hazards posed by river flooding and excess storm water runoff.
- 2) To protect or restore aquatic ecosystems from damage resulting from storm and other surface water runoff.

The sections described below reflect the proposed 2006 reorganization and describes the responsibilities for meeting the Water and Land Resources Capital Program goals.

- **Capital Projects:** The Capital Projects Section designs and constructs the projects required to resolve localized flooding, prevent erosion, or restore aquatic habitat.
- **Rural and Resource Programs:** The Rural and Resource Programs Section determines and acquires the designated open space and other real estate needed to protect aquatic ecosystems and provide flood storage. These programs work to reduce flooding of agricultural fields and promote the construction of best management practices by rural landowners to improve water quality.
- **Regional Services:** The Regional Services Section implements capital projects that facilitate the protection of the public from flooding on major rivers and restore river ecosystems. These projects include major maintenance of levees and revetments, flood storage construction projects, and home buyouts to restore the natural floodplain.
- **Storm Water Services:** The Storm Water Services Section manages small capital projects at a neighborhood level to reduce localized flooding and improve water quality. Projects include culvert replacements, installation of drainage pipe, or the retrofit of stormwater flow-control facilities.

Implementing the salmon conservation plans are a key concern. These plans recommend capital projects to create salmon habitat by reconnecting floodplains, restoring riparian forest cover, installing large woody debris in river channels, creating side-channels to protect rearing juvenile salmon, and removing levees and other forms of bank hardening. The WLRD will work with federal, state, and regional coalitions to evaluate options and implement a solution to support these projects.

Current projections of costs are shown in Table 1 below.

**Table 1: Projected Expenditures to Implement First Years of Salmon Conservation Plans**

<b>WRIA Areas</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>Total</b>
WRIA 7	\$2,500,000	\$2,500,000	\$2,500,000	\$2,500,000	\$10,000,000
WRIA 8	\$15,000,000	\$16,000,000	\$15,900,000	\$15,000,000	\$61,900,000
WRIA 9	\$15,000,000	\$15,000,000	\$15,000,000	\$15,000,000	\$60,000,000

In 2006, WLRD is proposing to implement a new budgeting approach for the Surface Water Management capital program (fund 3292). The requested appropriation is in fewer more broadly-scoped projects. The projects are intended to align with the division's goals and provide WLRD with the flexibility for staff to increase program productivity. This proposed change will indicate more clearly the goals of the capital program, increase program productivity and decrease the number of quarterly supplemental ordinance adjustments to the adopted budget.

### **Project Prioritization Methodology**

Projects are prioritized within each program area. Funding sources are based on program-specific criteria. These criteria consider factors of cost, effectiveness, feasibility, urgency, and geographic equity. The projects are then prioritized and scheduled across program lines by the division director, assistant director, and the senior division managers at the beginning of the annual budget process. The focus of this second prioritization is optimization of the division's effectiveness across all programs and funding sources.

### **Growth Management and Comprehensive Plan Issues**

The projects included in the 2006 request address the Growth Management Act policy directives in accordance with the Adopted 2000 King County Comprehensive Plan. These policies refer to the capital program and capital projects generally, and a number of policies are specific to the work of WLRD.

- Chapter 4, Environment, contains Policy E-126 which states that stormwater runoff shall be managed through a variety of methods to limit impacts to aquatic resources, protect and enhance the viability of agricultural lands, and promote groundwater recharge.
- Policy E-128 requires that river and stream channels, stream outlets, headwater areas, and riparian corridors be preserved, protected and enhanced for their hydraulic, hydrologic, ecological and aesthetic functions, including their functions in providing woody debris sources to salmonid-bearing streams.
- Policy E-168 states that King County shall use measures such as regulations, incentives, capital projects and purchase, to designate and protect fish and wildlife habitat conservation areas.
- Chapter 7, Facilities, lists resources and services that the County must provide: regional parks, trails, and preserved open spaces; water resource management, surface water management and flood warning, protection and preservation of natural resources (Policy F-103).

## **Asset Preservation**

Water and Land Resources Division inspects and maintains storm water flow control facilities constructed by private developers and King County. Developers construct flow control and water quality facilities as part of new developments. These facilities are transferred to King County at the end of a two-year maintenance defect bond program. Due to the large number of facilities, they are inspected on a phased assessment schedule and maintenance work is performed by Department of Transportation Special Operations Crews. WLRD staff inspects privately owned multi-family and commercial flow control facilities, notifies owners of maintenance needs, and monitors maintenance completion. Surface Water Management fee discounts are granted to residents who maintain their facilities to performance design standards.

WLRD also inspects and maintains river levee systems that were constructed by the U.S. Army Corps of Engineers in the 1930s along the six major river systems that flood annually in King County. Annual river facility assessments and new approaches to flood hazard reduction maximize public health and safety and minimize flood hazards and damage to public and private property.

In addition, WLRD oversees county-owned natural lands, such as those acquired for forest preservation and aquatic habitat protection, or to increase the amount of river flood plain. The division installs bollards and gates to restrict access, posts “no trespassing” signs, and removes any hazards such as dilapidated structures. When access is breached, the division removes any substantial debris left by trespassers and squatters.

## **Financial Planning and Policy Overview**

Multi-year financial plans are maintained for each CIP fund. These financial plans provide all revenues and expenditures for the present year, the prior year actuals, and a two-year projection. A six-year plan is prepared annually to quantify the division’s long-term capital requirements in conformance with long-term comprehensive plans.

Water and Land has several funding sources for capital projects. The primary sources are Surface Water Management fees, the River Improvement Levy, and the Conservation Futures levy. The division also receives substantial external funding from the Salmon Recovery Fund Board (SRFB), the Federal Emergency Management Agency (FEMA), the Green River Flood Control Zone District (GRFCZD), the King Conservation District (KCD), the Aquatic Lands Enhancement Account (ALEA), the City of Seattle, and others.

A summary of the various revenue sources is shown in Table 2 below.

<b>Table 2: CIP Funds and Restrictions</b>		
<b>Fund No.</b>	<b>Fund Name</b>	<b>Fund Usage/Restrictions</b>
3151	Conservation Future Levy	KCC Citizen Oversight Committee selects [Open Space] acquisition projects from a list of applications meeting specific Conservation Futures Levy selection criteria for council approval. Levy proceeds also provide debt service for several major open space acquisition projects.
3180	River Improvement Fund	For projects to control waters subject to flooding conditions through the construction, operation and maintenance of dams and impounding basins and dikes, and the acquisition of property.
3292	Surface Water Management Original [Urban] Service Area	Funds can be used only in the original SWM service area for projects that protect life and property from stormwater damage and that restore/protect aquatic habitat.
3292	Surface Water Management Rural (Extended Service Area)	Funds can only be used in the Rural (extended) service area, new in 2000, for projects that provide protection from stormwater damage for life and property.
3292	SWM Bonds	Restricted to SWM projects identified on various bond issues.
3391	Working Forestry ANRI Bond	Funds to be used for Forest preservation with any remaining money spent on Forestry.
3521	1989 Open Space Bond County	Funds can only be used for selected Open Space Bond projects; reallocations must meet Open Space Bond intent and Open Space criteria.
3522	Open Space Non-Bond Fund	Revenue from numerous sources such as REET, IAC and SRFB grants. Restrictions on usage depend upon revenue source.
3840	Farmland Preservation Bond	For acquisition of Farmland Development rights within specific Agriculture Production Districts. Agriculture Committee must approve allocation and reallocation.
3841	Agriculture ANRI Bond	For acquisition of Farmland Development rights within specific Agriculture Production Districts. Agriculture Committee must approve allocation and reallocation.

The following table displays major projects over \$200,000 for which appropriations are requested.

<b>Significant Projects Flood Hazard Reduction, Surface Water Management and Habitat, Agriculture and Forest Preservation Capital Improvement Programs</b>	<b>2006 Executive Proposed Budget</b>	<b>Continuation of Existing Project</b>
WRIA 7 Ecosystem Protection	\$1,280,000	X
Public Safety & Major Property Protection	\$1,224,327	X
WRIA 8 Ecosystem Protection	\$830,000	X
Vashon Ecosystem Protection	\$705,800	X
Tacoma Pipeline V Mitigation	\$654,770	X
WRIA 9 Ecosystem Protection	\$598,000	X
Agricultural Drainage Assistance	\$583,010	X
Neighborhood Drainage & Water Quality	\$580,000	X
Flood Hazard Mitigation	\$536,041	X
WRIA 10 Ecosystem Protection	\$414,254	X
Des Moines Basin Plan CIP	\$350,000	X
Natural Lands Preserve & Protect	\$220,000	X

In 2006, WLRD is proposing to implement a new budgeting approach for the Surface Water Management capital program (fund 3292). The requested appropriation is in fewer more broadly-scoped projects. A list of the identified sub-projects for new program categories is listed on the next page.

<b>Master Project</b>	<b>Sub-Project</b>	<b>Project Description/ Title</b>	<b>Total</b>
<b>P20000</b>		<b>Public Safety &amp; Major Property Protect</b>	
	0A1205	May Valley Flood Reduction	\$ 55,000
	0A1786	DHI (Waterwheel)	70,000
	0A1827	Urban Emergency/Opportunity	150,000
	0A1862	Project Feasibility - SWM	120,000
	0B1395	Sommerset Cr Drainage Imp	363,327
	0B1871	Mallard Lake Flood Reduction	260,000
	0C1871	12th Ave SW Conveyance	150,000
	0R1795	Vashon Groundwater Model	56,000
		<b>P20000 Total</b>	<b>\$ 1,224,327</b>
<b>P23000</b>		<b>WRIA 7 Ecosystem Protection</b>	
	0A1795	Lower Tolt Restoration	850,000
	0L1795	Raging Rvr Preston Reach Restoration	430,000
		<b>P23000 Total</b>	<b>\$ 1,280,000</b>
<b>P24000</b>		<b>WRIA 8 Ecosystem Protection</b>	
	0A1826	Cedar/Lk Wash ERP	500,000
	0A1881	Cedar River Structure Removal	30,000
	0D1155	Lions Club Channel Restoration	100,000
	0F1155	Taylor Creek Final Phase	40,000
	P24901	WRIA 8 Stewardship (KCD)	50,000
	PAA001	Lewis Crk Restoration	110,000
		<b>P24000 Total</b>	<b>\$ 830,000</b>
<b>P25000</b>		<b>WRIA 9 Ecosystem Protection</b>	
	0A1525	Plemmons Meander Restoration	150,000
	0A1647	Green/Duwamish River Restoration	438,000
	W90001	Green River Riparian Planting	10,000
		<b>P25000 Total</b>	<b>\$ 598,000</b>
<b>P26000</b>		<b>WRIA 10 Ecosystem Protection</b>	
	0Z1795	Boise Mouth Restoration	414,254
		<b>P26000 Total</b>	<b>\$ 414,254</b>
<b>P27000</b>		<b>Vashon Ecosystem Protection</b>	
	0X1795	Natural Drainage Towncenter	100,000
	W15001	Ellis Cr Estuary Acq & Restoration	268,300
	W15002	Ellisport Cr Soil Remediation	75,000
	W15003	Judd Headwaters Acq	180,000
	W15004	Paradise Valley	82,500
		<b>P27000 Total</b>	<b>\$ 705,800</b>
		<b>Grand Total</b>	<b>\$ 5,052,381</b>

## **CIP Program Accomplishments and Completion Lists**

### **Projects Completed in 2004**

011035 Fenster Revetment Repair (Green River) – Construction  
047101 Snoqualmie Corps 205 USACE (Snoqualmie River) – In-Channel Widening, Excavation and Construction  
0A1061 Patterson Creek Tributary 383 Habitat Restoration Projects: Approximately 2:1 cost share with SPU, completed next phase of planting, conducting monitoring and maintenance  
0A1405 Skyway/West Hill Drainage Improvement Projects: 5 designed, 1 constructed  
0A1475 Green/Duwamish Ecosystem Restoration Program: Soil remediation of Duwamish Site 1  
0A1767 Des Moines Creek Basin Plan Projects: Design, permits, and Phase I construction of Regional Detention Facility (multi-entity funding)  
0A1785 Neighborhood Drainage Assistance Program: 13 capital projects designed, 12 constructed  
0A1786 SWM Small CIP/DHI: 4 projects designed and constructed  
0A1790 Native Plant Salvage Program: 10,900 plants salvaged, 10,054 plants established at project sites  
0A1798 Rural Small Habitat Restoration Program: 18 projects constructed, 5 projects maintained/monitored  
0A1803 Rural Rapid Response Opportunity Emergency: 3 projects designed, 3 constructed  
0A1825 CIP Monitoring and Maintenance Program: Monitored 16 project sites and maintained 15 project sites  
0B1785 Urban Rapid Response Opportunity Emergency: 2 projects designed, 2 constructed  
0D1790 Stormwater CIP Feasibility: Feasibility level designs of 5 projects  
0D1797 Lower Tolt Levee Setback (Seattle Public Utilities partner): Conceptual design completed  
0F1095 Urban Small Habitat Restoration Program: 11 projects constructed, 7 projects maintained/monitored  
0F1155 Taylor Creek - Maple Valley/Renton  
0G1795 Shamrock Park Drainage Improvements at 413th Avenue South: Constructed  
0L1795 Raging River at Carlin Levee: 60% design complete  
0Z1777 Tolt River - Carnation  
1A1505 Auburn Narrows Floodplain Restoration: Designed and constructed Phase I  
1A1826 Sammamish Transition Zone (Sammamish River) – Hydraulic and Hydrologic Modeling; Complete Preliminary Design  
1C1827 Lewis Creek Temporary Fish Passage Improvement: Constructed  
1F1155 Williams Pipeline Mitigation: Preliminary design completed  
2K1506 Lower Mullen Slough Site Restoration and Access Control (Green River Tributary) – Continuation from 2003  
316185 West Sammamish Trail - Woodinville  
423236 York Pump Station Drainage (WTD funds): Design/construct

4A1803 Storybook Creek Restoration: Provided technical assistance  
 5A1803 SE 456th Slope Stabilization (KCDOT partner): Constructed  
 7A1803 Watercress Creek Conveyance Improvement (KCDOT partner): Constructed  
 86318F Cedar Hills Stormwater Lagoon Retrofit (SWD funds): Permit  
 86318F Cedar Hills Stormwater Management Plan (SWD funds): Design  
 86318F Cedar Hills Stormwater Retrofit (SWD funds): Permit  
 86318F Cedar Hills Water Quality Retrofits (SWD funds): Design  
 9F1785 Lake Hicks Pumphouse Retrofit (KC Parks partner): Constructed  
 B47112 Raging River Bridge to Mouth Right (Raging River) – Design and Construction  
 D47111 Cedar Rapids/Ricardi Floodplain Restoration (Cedar River) – Salmon Recovery Fund  
 Board Grant Application Submittal & Award

### Projects to be Completed in 2005

001853 Big Spring - Enumclaw  
 011056 42nd Avenue South Revetment Washout (Green River) – Design and Construction  
 047101 Snoqualmie 205 USACOE (Snoqualmie River) – Bridge Abutment Removal  
 047107 Mill Creek Flood Management (Mill Creek, Tributary to Green River) – John  
 Flowers Parcel Acquisition  
 047112 Cedar River Flood Buyout - Maple Valley  
 047113 Flood Warning Center Technological Improvements – Continued from 2004  
 050N03 Snoqualmie Park Trail Repair (support to King County Parks): Design and construct  
 0A1061 Patterson Creek Tributary 383 Habitat Restoration Projects:  
 0A1311 Ambaum Way Drainage Improvement (Burien partner): Design and construct  
 0A1475 Green/Duwamish Ecosystem Restoration Program: Final design and permit of North  
 Wind's Weir; design and permit for Lones Levee  
 0A1627 White Center Greenway Wetland: Design and Phase I construction  
 0A1767 Des Moines Creek Basin Plan Projects – Regional Detention Facility and High Flow  
 Bypass (multi-entity funding): Design, construction management support, and permit  
 compliance  
 0A1785 Neighborhood Drainage Assistance Program: 22 capital projects designed, 17  
 constructed  
 0A1786 Drainage and Habitat Improvement Program: 2 projects designed and constructed  
 0A1790 Native Plant Salvage Program: Approximately 10,000 plants salvaged,  
 approximately 10,000 plants established in projects  
 0A1797 Lower Tolt Levee Setback (SPU partner): Complete conceptual design and studies  
 0A1798 Rural Small Habitat Restoration Program: 9 projects designed and constructed; 14  
 projects maintained  
 0A1803 Rural Rapid Response Opportunity Emergency: 3 projects designed, 2 constructed  
 0A1825 CIP Monitoring and Maintenance Program: monitor 21 sites and maintain 17 sites  
 0B1311 Mallard Lake Flood Reduction: Design and permit  
 0B1351 Soos Creek LWD Placement: Design  
 0B1395 Somerset Conveyance Improvement: Design and permits  
 0B1785 Urban Rapid Response Opportunity Emergency: 4 projects designed, 4 constructed  
 0C1311 12th Avenue SW Conveyance Improvement: Design and construction



0C1625 Lakewood Park Low Impact Development Water Quality Demonstration Project  
 (King County Parks partner): Construct  
 0D1155 Lions Club Habitat Restoration: Complete design and construct Phase I  
 0E1311 Mill Creek Tributary 053 Conveyance Improvement: Feasibility analysis  
 0E1645 Hamm Creek Clover Leaf Water Quality Improvement: Design and permits  
 0F1095 Urban Small Habitat Restoration Program: 18 projects designed and constructed; 21  
 projects maintained and monitored  
 0F1155 Taylor Creek Restoration Final Phase: Construction  
 0G1795 Shamrock Park – Ribary Creek R/D Pond Restoration: Constructed  
 0S1795 Piner Point - Vashon  
 0Z1795 Lower Boise Creek Stream Relocation: Conceptual design  
 1A1505 Auburn Narrows Floodplain Restoration: maintain Phase I. Update Phase II design  
 1C1827 Lewis Creek: Restore temporary fish passage improvement  
 1F1155 Taylor Creek Williams Pipeline Mitigation: Construction  
 1F1647 Pautzke/Fenster Green-Duwamish Ecosystem Restoration Project (Green River) –  
 Design  
 1G7105 Horseshoe Bend Levee Setback (Green River) – Design and Construction  
 316149 Green River Trail - Auburn  
 316441 Landsburg/Kanaskat Trail - Auburn/Ravensdale  
 86317F Madsen Creek Stormwater Management : Construction of Phase I Madsen R/D pond  
 86318F Cedar Hills Stormwater Management Plan (SWD funds): Design  
 D47111 Cedar Rapids/Ricardi Floodplain Restoration (Cedar River) – Site Acquisition and  
 Levee Removal Preliminary Design  
 F47112 Arcadia Flood Buyout (Cedar River) – Residential Home Acquisition

### Projects to be Completed in 2006

001841 Metzler Side Channel - Auburn/Kent  
 001853 Big Spring - Enumclaw  
 001854 Kanaskat - Auburn  
 011055 South 228th Mitigation and Habitat Restoration (Green River) – Design, Permitting,  
 Construction  
 047115 Lower Mullen Slough Habitat Restoration  
 0A1205 May Creek Obstruction Removal: 2 projects designed, 1 constructed  
 0A1525 Plemmons Meander – Lower Newaukum Creek: Complete 30% design  
 0A1767 Des Moines Creek Basin Plan Projects –High Flow Bypass Construction  
 management support and permit compliance  
 0A1785 Neighborhood Drainage Assistance Program: 15 capital projects designed, 10  
 constructed  
 0A1790 Native Plant Salvage Program: Will salvage 10,000 plants and install 10,000 plants  
 at project sites  
 0A1799 Drainage and Habitat Improvement Program: 1 project designed and constructed  
 0A1803 Rural Rapid Response Opportunity Emergency: 1 project designed

0A1825 CIP Monitoring and Maintenance Program: Will monitor at least 19 project sites and maintain at least 17 project sites  
 0B1785 Urban Rapid Response Opportunity Emergency: 1 project designed, 1 constructed  
 0B1787 Vashon Natural Drainage: Design and construct  
 0B1871 Mallard Lake Flood Reduction: Construct  
 0B1881 Soos Creek LWD: Permits  
 0C1085 Log Cabin Reach  
 0D1155 Lions Club Habitat Restoration: Construct Phase II  
 0E1145 Cedar Rapids/Ricardi Floodplain Restoration (Cedar River) – Final Design, Permitting and Construction  
 0F1095 Small Habitat Restoration Program: Will add 2-5 new projects; continue with phased work on 52 projects  
 0J1881 Taylor Creek Lane – Building Demolition  
 0L1795 Raging River at Carlin Levee: Complete design, permitting, and construct  
 0Z1795 Lower Boise Creek Stream Restoration: Complete design  
 1A1505 Auburn Narrows Floodplain Restoration: Complete Phase II design/permitting and construct  
 1A1826 Sammamish Transition Zone (Sammamish River) – Complete Final Design, Permitting and Secure Federal Construction Funds  
 1A1827 Mallard Lake Water Quality Improvement: Design  
 1A7105 13.5 Tolt Pipeline Protection (Snoqualmie River) – Complete Design, Biological Assessment, Permitting. 2007 Construction.  
 1C1827 Lewis Creek Permanent Fish Passage Improvement: Design and construct  
 1F1647 Pautzke/Fenster Green-Duwamish Ecosystem Restoration Project (Green River) – Final Design, Permitting  
 316149 Green River Trail - Auburn  
 86313F Madsen Creek R/D Pond Reparation – Phase II (WTD funds):  
 A47104 Snoqualmie 205 USACOE (Snoqualmie River) – Downstream Assistance Program  
 A47111 Lower Tolt Levee Setback (Tolt River) – Complete Design  
 A47112 Rainbow Bend Buyout (Cedar River) – Initiate Acquisition, Complete in 2007  
 P27000 Ellis Creek Estuary Restoration: Design, permit, and construct  
 P27000 Ellisport Soil Remediation: Obtain grants and begin design and permitting  
 Q47105 Banchemo Revetment Repair (Cedar River) – Construction  
 R47105 Pacific City Park Revetment (White River) – Construction  
 Z11293 Middle Green - Auburn